

**Case 3292*****Nasutitermes* Dudley, 1890, *Microcerotermes* Silvestri, 1901 and NASUTITERMITINAE Hare, 1937 (Insecta, Isoptera): proposed conservation**

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**Abstract.** The purpose of this application, under Article 23.9.3 of the Code, is to conserve the generic names *Nasutitermes* Dudley, 1890 (and the family-group name based upon it, NASUTITERMITINAE Hare, 1937) and *Microcerotermes* Silvestri, 1901 for two well-known groups of ecologically and agriculturally important termites. The names *Nasutitermes*, the largest genus of termites in the world, and *Microcerotermes* are threatened by the little-known but possibly synonymous name *Eutermes* Heer, 1849 whose suppression is proposed. The type species of *Nasutitermes* has been generally confused and we propose that the Commission should designate *Eutermes costalis* Holmgren, 1910 as its type species in accordance with universal taxonomic usage.

**Keywords.** Nomenclature; taxonomy; Isoptera; NASUTITERMITINAE; *Nasutitermes*; *Microcerotermes*; *Eutermes*; *Nasutitermes costalis*; *Microcerotermes strunckii*; termites.

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1. Heer (1849, p. 32) described *Eutermes* as a subgenus of *Termes* Linnaeus, 1758 and included in it five fossil species (three rock compressions and what were believed to be two Baltic amber inclusions): *Termes pristinus* Charpentier, 1843; *T. obscurus* Heer, 1849; *T. croaticus* Heer, 1849; *T. pusillus* Heer, 1849; and *T. debilis* Heer, 1849. No species was originally selected as the type species of *Eutermes*.

2. Hagen (1858) redescribed the above five species, transferring two to other subgenera, *T. pristinus* to *Termes sensu stricto* and *T. pusillus* to *Kalotermes* (under the unjustified emendation *Calotermes*), while expanding *Eutermes* to include numerous living species in addition to the three remaining fossil species, *T. obscurus*, *T. croaticus* and *T. debilis*. Hagen (1858, p. 207) further stated that he had examined the type of *T. debilis* and found that the fossil was not in 'Bernstein' (amber), but in gum copal, and identified the fossil specimen as identical to a Recent species, which he then described from specimens collected from 'Porto Rico'. To restate, Hagen (1858, p. 207) redescribed *T. debilis*, based not on the fossil specimen but on Recent specimens from 'Porto Rico', and indicated that the fossil specimen was identical

with these (see also Banks, 1920, p. 8). Thus, subsequent decisions that *T. debilis* is a species of *Microcerotermes* based on Hagen's assertion (Hagen's description does not actually allow for such an identification) are incorrect (e.g. Snyder, 1949; Constantino, 2002), since Hagen's description is not of the type specimen.

3. Dudley (1890, p. 158) proposed the genus-group name *Nasutitermes* for the nasute termites but did not include any species. Banks (1918, p. 665) was the first author to explicitly include species in *Nasutitermes*. Banks subsequently (1920, p. 69) designated *Termes morio* Latreille, 1805 as the type species of *Nasutitermes* (which he wrongly stated to be a new genus), but this was not an originally included nominal species. Moreover, Latreille (1805, p. 69) had clearly indicated that he was not proposing a new specific name but was identifying his material as *T. morio* Fabricius, 1793, just as he had done the year before (Latreille, 1804, p. 60). Latreille had misidentified his specimens as conspecific with Fabricius's material; Hagen (1858) was the first to note this error but considered Latreille as having thereby authored a new species as *T. morio*. *Termes morio*, therefore, cannot be used as an available name for Latreille's taxon (Article 49) and the species remained undescribed until Holmgren (1910a, p. 293) proposed the first available name as *Eutermes costalis*. Based on Hagen's (1858, p. 200) redescription of Latreille's material, Emerson (1925) identified Latreille's taxonomic species as conspecific with *E. costalis*. Thus, Sands (1965, p. 16) was correct when he asserted that *T. morio* Latreille, 1805 did not exist as a valid taxon and could not be a homonym of Fabricius's name, as erroneously considered by Emerson (1925). However, Sands was incorrect in stating that the misidentified taxonomic species could not be selected as the type of *Nasutitermes*, as Article 70.3.2 allows for such a designation. Under Article 70.3, because the type species was misidentified by Banks (1919, 1920), yet another explicit subsequent designation is required: either the nominal species (i.e. *T. morio* Fabricius, as used by Banks and currently placed in *Coptotermes* Wasmann, 1897; such a selection would make *Nasutitermes* a junior synonym of *Coptotermes*) or the taxonomic species actually involved (i.e. *E. costalis*). Emerson (1925, p. 379) and authors following him (e.g. Snyder, 1949; Prasad & Sen-Sarma, 1959; Constantino, 2002) cannot be considered as having subsequently designated the type species of *Nasutitermes* as all of them misused *T. morio* as an available name dating from Latreille (1805). Thus, no type species designation is currently valid for *Nasutitermes*. In view of the confusion arising from the double misidentification of *T. morio*, we propose that the Commission should, following current usage, designate *Eutermes costalis* Holmgren, 1910a as the type species of *Nasutitermes*. The non-nasute termite *T. morio* Fabricius, 1793 is a junior synonym of *Hemerobius testaceus* Linnaeus, 1758, currently *Coptotermes testaceus*. Hare (1937, p. 462), believing *E. costalis* (as *T. morio*) to be the type species, established the family-group name NASUTITERMITINAE for *Nasutitermes* and allied nasute genera.

4. Wasmann (1897, p. 151) restricted *Eutermes* to nasute species and selected *T. morio* Latreille, 1805 (a misuse as noted above) as the type species of *Eutermes*. This type species designation is invalid, as *T. morio* was not a species originally included in *Eutermes*.

5. Silvestri (1901, p. 3) proposed the generic name *Microcerotermes* for a group of non-nasute termites in the TERMITINAE with *Termes strunckii* Sørensen, 1884 (p. 2) as the type species by monotypy.

6. Holmgren (1910b, p. 146), apparently following the understanding of earlier authors (e.g. Müller, 1873; Froggatt, 1896, 1897; Wasmann, 1897) that *Eutermes* constituted nasute termites, established the name EUTERMITINAE for *Eutermes* and related nasute taxa. Holmgren (1910a, 1910b, 1912, 1913) treated the genus *Eutermes* (with a number of subgenera) in a more restricted sense than Hagen (1858) by including nasute termite species only.

7. Banks (1919, p. 482) examined one of Hagen's Recent specimens of *T. debilis* from Puerto Rico, identified it as a species of *Microcerotermes*, designated *T. debilis* as the type species of *Eutermes* and thereby relegated *Microcerotermes* to synonymy since *Eutermes* had priority. Further, in agreement with Hagen (1858), he indicated that *T. debilis* is not strictly a fossil species although he did not see the fossil type specimen of *T. debilis*. Banks reiterated these decisions in 1920 (p. 8). Banks's designation of a type species is valid despite the failure to confirm the identity of *T. debilis*.

8. Emerson (1925, 1928) stated that Banks (1919, 1920) was correct in confining the name *Eutermes* to *T. debilis*. Snyder (1949) and subsequent authors have similarly confined *Eutermes* to *T. debilis* (e.g. Nel & Paicheler, 1993; Constantino, 2002). Heer's amber specimen has not been seen since Hagen's time and, moreover, was an imago, a caste which does not easily offer definitive taxonomic characters for generic determination. Furthermore, Banks based his identification of *T. debilis* as a *Microcerotermes* on Hagen's Recent Puerto Rican material. Unless Heer's original specimen (supposedly in Zurich but at present untraceable) can be examined there is no way of knowing whether it belongs to *Microcerotermes*, *Nasutitermes*, or any other termite genus.

9. Should *T. debilis* prove to be a nasute termite, the name *Eutermes* would take precedence over *Nasutitermes*. In addition, the family-group name based on *Eutermes* would take precedence over NASUTITERMITINAE for *Nasutitermes* and allied nasute termite genera. Alternatively, should *T. debilis* prove to be a species of *Microcerotermes* the name *Eutermes* would take precedence. Indeed, Heer's *T. debilis* is probably a species of *Microcerotermes*, but in the absence of the type material such an identification remains speculative.

10. Regardless of the identity of Heer's missing type specimen, the genus-group name *Eutermes* threatens the stability of two well-known groups of ecologically and agriculturally important termites, *Nasutitermes* and *Microcerotermes*. Furthermore, should *Eutermes* prove to be a nasute and thereby have priority over *Nasutitermes* (the largest genus of termites in the world), the family-group name EUTERMITINAE would replace the universally employed name NASUTITERMITINAE. The names *Nasutitermes* and NASUTITERMITINAE have been universally used for the nasute termites since 1937 and in an extensive body of literature (e.g. Lefeuvre, 1987; Cookson, 1988; Thorne et al., 1994; Krishna, 1996; Roisin & Pasteels, 1996; Atkinson & Adams, 1997; Hoare & Jones, 1998; Constantino, 1998; Thompson & Hebert, 1998; Noirot, 2001; Buschini & Leonardo, 2002). Similarly, *Microcerotermes* has been employed as a valid name since 1901 and universally used in the literature for taxa related to *Microcerotermes strunckii* (e.g. Holmgren, 1910b; Kistner & Doty, 1988; Roisin, 1990; Adams, 1991; Akhtar et al., 1991; Leponce et al., 1996; Tyagi & Sen-Sarma, 1997; Roisin & Pasteels, 2000; Coronel & Porcel, 2002). Presently involved in the completion of a revised world catalog of the termites, we propose that in the interest

of stability the names *Eutermes* and EUTERMITINAE be suppressed or set aside and placed on the Official Indexes of Invalid and Rejected Generic and Family-Group Names in Zoology, respectively.

11. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power:
  - (a) to suppress the generic name *Eutermes* Heer, 1849 for the purposes of the Principle of Priority but not for those of the Principle of Homonymy;
  - (b) to set aside all previous fixations of type species for the nominal genus *Nasutitermes* Dudley, 1890 and to designate *Eutermes costalis* Holmgren, 1910a as the type species;
- (2) to place on the Official List of Generic Names in Zoology the following names:
  - (a) *Nasutitermes* Dudley, 1890 (gender: masculine), type species by designation in (1)(b) above *Eutermes costalis* Holmgren, 1910a;
  - (b) *Microcerotermes* Silvestri, 1901 (gender: masculine), type species by monotypy *Termes strunckii* Sørensen, 1884;
- (3) to place on the Official List of Specific Names in Zoology the following names:
  - (a) *costalis* Holmgren, 1910a, as published in the binomen *Eutermes costalis* (specific name of the type species of *Nasutitermes* Dudley, 1890);
  - (b) *strunckii* Sørensen, 1884, as published in the binomen *Termes strunckii* (specific name of the type species of *Microcerotermes* Silvestri, 1901);
- (4) to place on the Official List of Family-Group Names in Zoology the name NASUTITERMITINAE Hare, 1937 (type genus: *Nasutitermes* Dudley, 1890);
- (5) to place on the Official Index of Invalid and Rejected Generic Names in Zoology the name *Eutermes* Heer, 1849, as suppressed in (1)(a) above;
- (6) to place on the Official Index of Invalid and Rejected Family-Group Names in Zoology the name EUTERMITINAE Holmgren, 1910b (based on a generic name suppressed in (1)(a) above).

### Acknowledgements

We are grateful to V. Krishna and C.B. Boyko for comments on this petition. This work was supported by a grant from the National Science Foundation, U.S.A. (DEB-9870097 to K. Krishna and D.A. Grimaldi).

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Acknowledgement of receipt of this application was published in BZN **60**: 178.

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